



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4854-1

Job Sheet 180377



Part No: D4854-1

Job Qty: 24 ea

Part Name: Lower Bracket



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 7/5/18

Job Tracking No:

Due Date: 7/13/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: D4854 REV.B IPP REV:A NEW ISSUE 13-07-22 JLM VERIFIED BY:JFS IPP REV:B 17.12.08 AS PER DWG REV.B DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Purchasing	24 pcs		7/13/18	0.00	0.00	Purchasing		18.09.14
100	Packaging	24 pcs		7/13/18	0.05	0.00	Packaging2		18.09.14
105	QC	24 pcs		7/13/18	0.00	0.00	QC6		38
180	Packaging	24 pcs		7/13/18	0.00	0.00	Packaging3-2		SEP 14 2018
190	QC21-SA	24 Ea		7/13/18	0.00	0.00	QC21		

Part Op 90 - ISSUE P/O TO METEC: 040422 MANUFACTURE AS PER DWG C OF C IS REQUIRED

8102 9 0 700

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D4921	Lug Extrusion	1.5840 ft (.066 ea)	90-Purchasing	

D4854-1 P

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Purchasing	D4921	2	248	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Lower Bracket	0.300Inches ± 0.030	0.330 0.270		
2	Lower Bracket	0.500Inches ± 0.030	0.530 0.470		
3	Lower Bracket	0.750Inches ± 0.030	0.780 0.720		
4	Lower Bracket	0.260Inches ± 0.005	0.265 0.255		
5	Lower Bracket	3.500Inches ± 0.030	3.530 3.470		
6	Lower Bracket	2.200Inches ± 0.030	2.230 2.170		
7	Lower Bracket	4.450Inches ± 0.030	4.480 4.420		



Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS																																																																																			
Part No. _____		Rework ☐		Skid-tube ☐		Cross tube ☐		Water Jet ☐	Engineering ☐																																																																														
NCR No. _____		Scrap ☐		Machining ☐		Small Fab ☐		Prod. Eng. Coord. ☐	Quality ☐																																																																														
		Use-as-is ☐		Thermoforming ☐		Finishing ☐		Rec/Store/Packaging ☐	Other ☐																																																																														
		Suspected Unapproved ☐		Large Fab ☐		Composite ☐		Supplier ☐																																																																															
Date : _____	Step #: _____	QTY Effective _____						MRB (QSI042) Approval																																																																															
Description Work Order Deviation _____																																																																																							
 DART AEROSPACE Container No: S110222 Part: D4854-1 Job No: 180377 Serial No/Batch: S110222 Revision: B Inspector: Exp Date: Instructions: Various STC's Date: 09/14/18								Completed By																																																																															
								Lead hand / Supervisor Approval Verification																																																																															
								QC / QA Coordinator Approval																																																																															
<table border="1"> <thead> <tr> <th colspan="2">Root Cause</th> <th colspan="2">Other</th> <th colspan="2">Positioned Wrong</th> </tr> </thead> <tbody> <tr> <td>Environment ☐</td> <td>☐</td> <td>Material Loss/Surge ☐</td> <td>☐</td> <td>Positioned Wrong ☐</td> <td>☐</td> </tr> <tr> <td>Design ☐</td> <td>☐</td> <td>Program ☐</td> <td>☐</td> <td>Outside Dimensions ☐</td> <td>☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>☐</td> <td></td> <td>☐</td> <td>Over/Under tolerance ☐</td> <td>☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>☐</td> <td></td> <td>☐</td> <td>Part Incorrect ☐</td> <td>☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>☐</td> <td></td> <td>☐</td> <td>Part Lost/Missing ☐</td> <td>☐</td> </tr> <tr> <td>Material ☐</td> <td>☐</td> <td>Contamination ☐</td> <td>☐</td> <td>Part Moved ☐</td> <td>☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>☐</td> <td>Countersink ☐</td> <td>☐</td> <td>Drawing ☐</td> <td>☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>☐</td> <td>Cut Too Short ☐</td> <td>☐</td> <td>Finish ☐</td> <td>☐</td> </tr> <tr> <td>LOA ☐</td> <td>☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>☐</td> <td>Misread ☐</td> <td>☐</td> </tr> <tr> <td>Substation ☐</td> <td>☐</td> <td>Drill Holes ☐</td> <td>☐</td> <td>Turning Sequence ☐</td> <td>☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>☐</td> <td></td> <td>☐</td> <td></td> <td>☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>☐</td> <td></td> <td>☐</td> <td></td> <td>☐</td> </tr> </tbody> </table>										Root Cause		Other		Positioned Wrong		Environment ☐	☐	Material Loss/Surge ☐	☐	Positioned Wrong ☐	☐	Design ☐	☐	Program ☐	☐	Outside Dimensions ☐	☐	Doc/Data ☐	☐		☐	Over/Under tolerance ☐	☐	Equip/Tooling ☐	☐		☐	Part Incorrect ☐	☐	Handling/Pre ☐	☐		☐	Part Lost/Missing ☐	☐	Material ☐	☐	Contamination ☐	☐	Part Moved ☐	☐	Internal Transport ☐	☐	Countersink ☐	☐	Drawing ☐	☐	Tribal Knowledge ☐	☐	Cut Too Short ☐	☐	Finish ☐	☐	LOA ☐	☐	Instructions Incomplete/Unclear ☐	☐	Misread ☐	☐	Substation ☐	☐	Drill Holes ☐	☐	Turning Sequence ☐	☐	Past Expiry Date ☐	☐		☐		☐	Misidentified ☐	☐		☐		☐
Root Cause		Other		Positioned Wrong																																																																																			
Environment ☐	☐	Material Loss/Surge ☐	☐	Positioned Wrong ☐	☐																																																																																		
Design ☐	☐	Program ☐	☐	Outside Dimensions ☐	☐																																																																																		
Doc/Data ☐	☐		☐	Over/Under tolerance ☐	☐																																																																																		
Equip/Tooling ☐	☐		☐	Part Incorrect ☐	☐																																																																																		
Handling/Pre ☐	☐		☐	Part Lost/Missing ☐	☐																																																																																		
Material ☐	☐	Contamination ☐	☐	Part Moved ☐	☐																																																																																		
Internal Transport ☐	☐	Countersink ☐	☐	Drawing ☐	☐																																																																																		
Tribal Knowledge ☐	☐	Cut Too Short ☐	☐	Finish ☐	☐																																																																																		
LOA ☐	☐	Instructions Incomplete/Unclear ☐	☐	Misread ☐	☐																																																																																		
Substation ☐	☐	Drill Holes ☐	☐	Turning Sequence ☐	☐																																																																																		
Past Expiry Date ☐	☐		☐		☐																																																																																		
Misidentified ☐	☐		☐		☐																																																																																		
OTHER : _____																																																																																							

8	Lower Bracket	0.257Inches + 0.005 - 0.000	0.262 0.257	Diameter
9	Lower Bracket	3.700Inches ± 0.005	3.705 3.695	
10	Lower Bracket	0.257Inches + 0.005 - 0.000	0.262 0.257	Diameter
11	Lower Bracket	1.880Inches ± 0.030	1.910 1.850	
12	Lower Bracket	1.250Inches ± 0.010	1.260 1.240	
13	Lower Bracket	0.380Inches ± 0.030	0.410 0.350	Radius
14	Lower Bracket	0.380Inches ± 0.030	0.410 0.350	Radius

Plex 7/5/18 11:44 AM Dart.lajeunesse.marie

DQA: _____ Date: _____

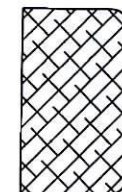
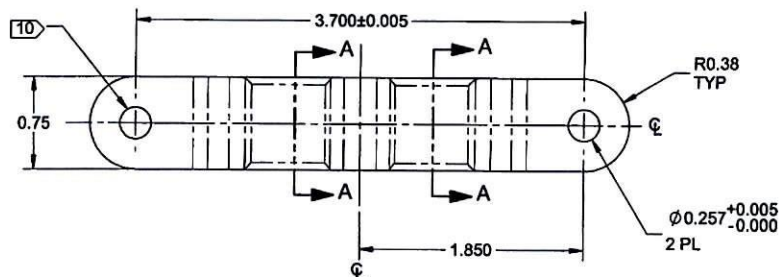


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

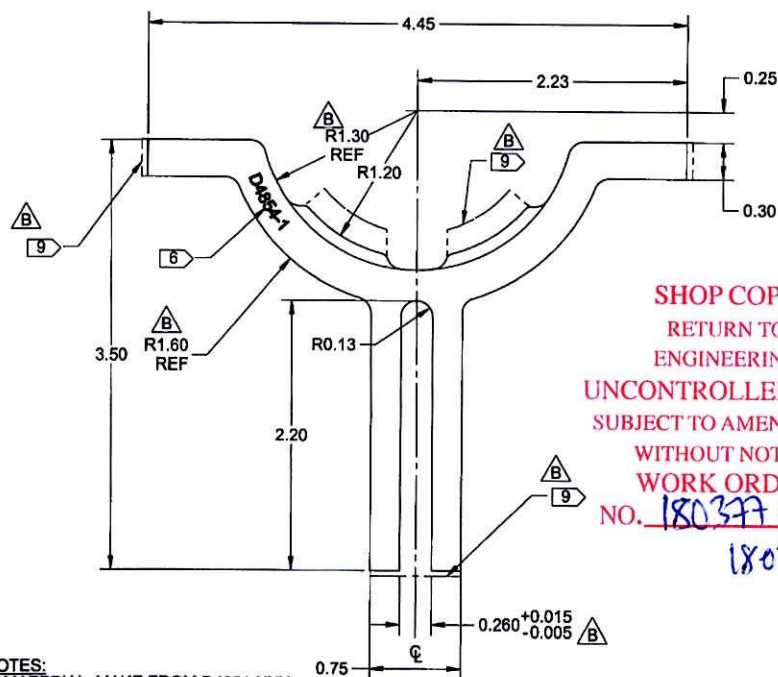
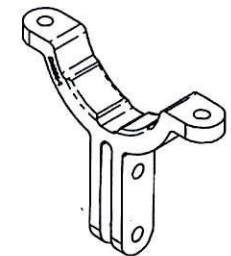
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

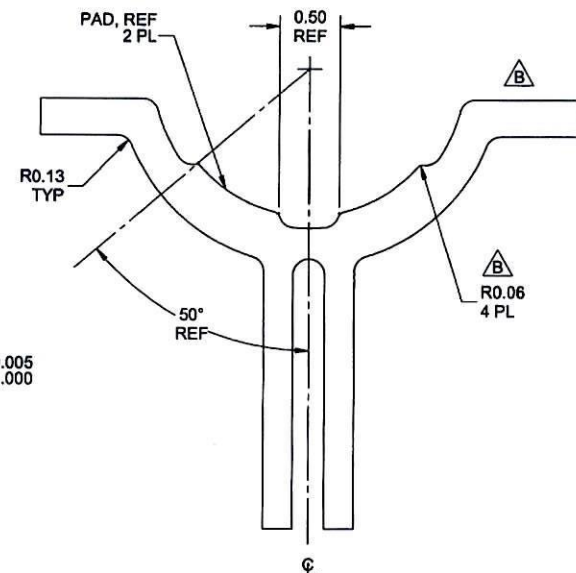
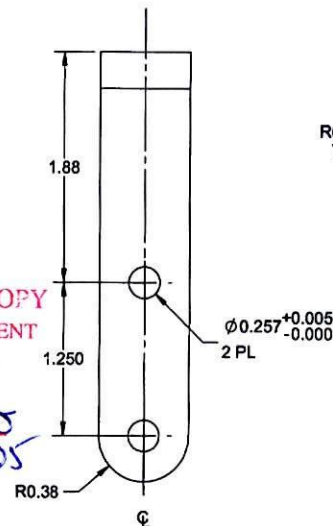


SECTION A-A
SCALE 2X

R0.06 MIN - R0.10 MAX
TYP AROUND PAD



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 180377 MJS
1807-05



NOTES:

- 1) MATERIAL: MAKE FROM D4921-XXX LUG EXTRUSION
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AS SHOWN PER QSI 044 6.3 TO A DEPTH OF 0.010±0.005 IN THIS LOCATION WITH TOOL TIP RADIUS OF 0.015±0.005
- 7) WEIGHT: 0.19 lbs
- 8) REPLACES GENEVA P/N G13013-2
- 9) MACHINE TO SIZE
- 10) MASK HOLES PRIOR TO POWDER COAT

D4854-1 LOWER BRACKET

RELEASED
2017-09-28
ECN17-180

APPROVED

B	UPDATE MATERIAL TO D4921 LUG EXTRUSION, REVISE DIMENSIONS, ADD NOTE 10 ALL SHEETS	VS	16.02.04
A	NEW ISSUE	VS	13.05.15
REV.	DESCRIPTION	BY	DATE
DESIGN	VS	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	VS		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D4854	SHEET 1 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	LOWER BRACKET	NTS
DATE	16.02.04	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					



www.metec.ca | 20 Terry Fox Drive, Vankleek Hill, Ontario, Canada K0B 1R0 | Phone: +1 613-678-3957 Fax: +1 613-678-3956

Packing List

Bill Dart Aerospace Ltd.
To: 1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada

Ship Dart Aerospace Ltd.
To: 1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada

Shipment No: 24036
Shipment Date: 14-Sep-2018
Ship Via: p/u by dart
Order Number: 1747
Order Date: 08/30/18

Customer Code: DART
Phone: (613) 632-9577
PO Number: PO040422
Terms: ?

----- Quantity -----								Job
<u>Item</u>	<u>Open</u>	<u>Shipped</u>	<u>B/O</u>	<u>Canceled</u>	<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Number</u>
1	24	24	0	0	EA	DART-D4854-1P Lower Bracket		1747-01

DAS
38
8-89

The delivered goods must be inspected upon receipt to confirm compliance. Should there be discrepancies please notify METEC within 30 days of delivery. The goods are otherwise deemed accepted.

Received In Good Order By

Page 1 of 1



20 Terry Fox Drive, Vankleek Hill, Ontario K0B 1R0
Tel. (613) 678-3957 & (613) 678-2782 Fax (613) 678-3956 metec@metec.ca

CERTIFICATE OF CONFORMITY

SOLD TO:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, Ont.
K6A 1K7

SHIPPED TO:

same

Quantity	Part Number	Part Name	Dwg Rev.#	Material Batch #	Paint Batch #	P.O. Number
24	D4854-1	Lower Bracket	B	897077	Unpainted	PO040422

MATERIAL: supplied by DART

We hereby certify that the above parts were made in conformance with applicable drawings.

DAS
38
9-88

METEC Metal Technology Inc.


Joey Agostinucci

Vankleek Hill, Sept 14, 2018